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# An International Pulsar Data Archive

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**Abstract.** We have organized a system to provide pulsar profiles and time-of-arrivals (TOAs) via anonymous ftp and the World Wide Web (WWW) at the address http://orion.usno.navy.mil/archive.html.

## 1. Introduction

If pulsar data were freely shared and pooled, there would be benefits for the entire community. The history of science provides many recent examples of such benefits, such as the pooling of atomic clock data to generate International Atomic Time (TAI), and the pooling of over a million geodetic VLBI observations, which makes possible long-term studies of cosmology, relativity, and quasar emission models.

As an example of more specific interest, consider the possible benefits which would accrue from a pooling of all the data on PSR B1937+21, which is regularly observed by many observatories. Several groups have published their data showing interesting variations in brightness, dispersion measure, and time of arrival. A better understanding of these variations would be achieved through detailed studies of complementary data taken at different frequencies and times. Calibration, always a problem, can be checked using the redundancy of nearly simultaneous observations at different observatories. For theorists, or those who have not made the observations, and for pedagogical purposes there is nothing better than real data. Finally, there is the benefit that data are thereby preserved for posterity, which could well include the observer himself or herself several years after the fact.

Of course, there are intellectual property rights to be considered. While it is the policy of the National Radio Astronomy Observatory (NRAO) to make all data public one year after they are taken, we suggest that the proper time to donate pulsar timing data to an archive service is after they are first published.

## 2. Organization

The data made available in the USNO archive include profiles averaged on the time scales of minutes, templates, TOAs, and all the information needed to compute new TOAs. We can also store profiles lacking the time correction needed

to generate TOAs, and TOAs without the profiles. A complete description of what is stored and how it is formatted can be found using our home page on the WWW.

There are several ways one can use the service. The simplest approach is to logon via anonymous ftp to orion.usno.navy.mil and transfer the entire database, along with the Fortran source code used to read it. Data that are available as TOAs only, without associated profiles can be transferred directly from the WWW home page. Since the profile data are stored as HP-binary direct access files, the user will probably find it more convenient to use the WWW home page to fill out and submit a short form, which will cause the computer to write only the requested data, in the specified ASCII format. It will also supply a template for an ftp call which will copy over that data.

Since this is a new service, it is still flexible and the format can easily be modified. The goal is to be user-friendly, and we are now adding the capability to output data in FITS format and in the format of the European Pulsar Network. We also provide hyperlink access to other groups which have placed their data on the WWW, such as those at Princeton University and Aristotle University.

We are soliciting contributions, and have been promised data from the JPL Pulsar Program, some data from the Green Bank 140' and 85-3 antennas, and also some from Arecibo. TOAs from PSR J1713+0747 (Camilo *et al.*,1994, ApJ 437, L39) are already available. If you would like to donate data, or to be placed on a mailing list which will inform you as new data become available, please send a message to the address given on our WWW home page, which is dnm@orion.usno.navy.mil.

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